

**Listing of Claims:**

1. (Previously Presented) A method for configuring addresses in a packet switched data communication system, the method comprising:  
configuring at a network element a first address for an interface of a sub-element of the network element, the network element comprising a control module and the sub-element, wherein the first address is valid in an internal network associated with the network element;  
retrieving an identifier of the network element from the control module; and  
defining a second address for the interface of the sub-element based on the retrieved identifier of the network element and the first address, wherein the second address is valid in an external network with which the network element communicates.
2. (Previously Presented) The method according to claim 1, wherein the first address is a local link layer address for the interface of the sub-element.
3. (Previously Presented) The method according to claim 1, wherein the first address for the interface of the sub-element is configured based on the position of the sub-element in the network element.
4. (Previously Presented) The method according to claim 1, wherein the first address for the interface of the sub-element is configured based on a serial number of the sub-element.
5. (Previously Presented) The method according to claim 1, wherein the control module is configured to access the identifier of the network element without communicating with other network elements.
6. (Previously Presented) The method according to claim 5, wherein the control module is configured to store the identifier of the network element in a memory of the control module.

7. (Previously Presented) The method according to claim 1, further comprising verifying the uniqueness of the second address using a duplicate address detection process.

8. (Previously Presented) The method according to claim 1, wherein the identifier of the network element is retrieved from the control module using the first address as a unique address to carry out an automatic address resolution procedure locally in the network element.

9. (Previously Presented) The method according to claim 1, wherein the defined second address comprises a network layer address for the interface of the sub-element.

10. (Previously Presented) The method according to claim 1, further comprising blocking, inside the network element, all data packets that do not contain the identifier of the network element.

11. (Previously Presented) The method according to claim 1, further comprising enabling the interface of the sub-element for network element external communication after the second address for the interface of the sub-element is defined.

12. (Previously Presented) The method according to claim 1, further comprising retrieving a network portion identifying a logical network including the network portion with the second address of the interface of the sub-element.

13. (Previously Presented) The method according to claim 12, wherein the logical network is a layer 2 switched local area network with at least two network elements.

14. (Canceled)

15. (Previously Presented) A network element comprising:  
a sub-element;  
a control module;  
a processor; and

a computer-readable memory operably coupled to the processor, the computer-readable memory comprising instructions that, if executed by the processor, cause the network element to perform operations comprising:

configuring a first address for an interface of the sub-element, wherein the first address is valid in an internal network associated with the network element;

retrieving an identifier of the network element from the control module; and

defining a second address for the interface of the sub-element based on the retrieved identifier of the network element and the first address, wherein the second address is valid in an external network with which the network element communicates.

16. (Previously Presented) The network element according to claim 15, wherein the first address is a local link layer address for the interface of the sub-element.

17. (Previously Presented) The network element according to claim 15, wherein the first address is configured based on the position of the sub-element in the network element.

18. (Previously Presented) The network element according to claim 15, wherein the first address is configured based on a serial number of the sub-element.

19. (Previously Presented) The network element according to claim 15, wherein the control module is configured to access the identifier of the network element without communicating with other network elements.

20. (Previously Presented) The network element according to claim 19, wherein the control module is configured to store the identifier of the network element.

21. (Previously Presented) The network element according to claim 19, wherein the operations further comprise verifying the uniqueness of the second address using a duplicate address detection process.

22. (Previously Presented) The network element according to claim 15, wherein the identifier is retrieved from the control module of the network element using the first

address as a unique address to carry out an automatic address resolution procedure locally in the network element.

23. (Previously Presented) The network element according to claim 15, wherein the defined second address comprises a network layer address for the interface of the sub-element.

24. (Previously Presented) The network element according to claim 15, wherein the operations further comprise blocking, inside the network element, all data packets that do not contain the identifier of the network element.

25. (Previously Presented) The network element according to claim 15, wherein the operations further comprise retrieving a network portion identifying a logical network and including the network portion with the second address of the interface of the sub-element.

26. (Previously Presented) The A network element according to claim 16, wherein the local link layer address is based on a 48-bit media access control identifier format.

27. (Previously Presented) The network element according to claim 23, wherein the network layer address is one of a link-local Internet Protocol version 6 address based on an EUI-64 identifier and an Internet Protocol version 4 address using a dynamic host configuration protocol.

28. (Previously Presented) The network element according to claim 15, wherein the network element is a transceiver.

29. (Previously Presented) A communication system comprising:  
a logical network comprising at least two network elements, a network element of the at least two network elements comprising at least one sub-element and a control module; and  
a configuring means for configuring a first address for an interface of a sub-element of the at least one sub-element, wherein the first address is valid in an internal network associated with the network element, and for defining a second address for the interface of the sub-element based on an identifier of the network element retrieved from the

control module and the first address, wherein the second address is valid in an external network with which the network element communicates.

30. (Previously Presented) The communication system according to claim 29, wherein the defined address further comprises a network portion identifying the logical network.

31. (Previously Presented) The communication system according to claim 29, wherein the second address comprises one of a link-local Internet Protocol version 6 address based on an EUI-64 identifier and an Internet Protocol version 4 address using a dynamic host configuration protocol.

32. (Previously Presented) The communication system according to claim 30, wherein the first address is based on a 48-bit media access control identifier format.

33.-38. (Canceled)